

Diabetes and older people: Issues of diagnosis and care

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Article points

1. While many older people manage their diabetes very well, a number of problems can exist in older people with the condition.
2. Older people may feel they are 'too old to worry' about their diabetes.
3. It is clear that older people with diabetes must be assessed on an individual basis regarding their capacity for diabetes self-care, or within the boundaries of resource availability which exist for institutional care.
4. As with the general population with diabetes, older people have varying diabetes management skills, abilities and coping strategies.

Key words

- Intellectual functioning
- Diet and exercise
- Eyesight
- Urinary and sexual problems

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In the UK, approximately 16% of the population are over the age of 65, with 7% over the age of 70 (Croxson, 2002). By 2025 it is also predicted that the figures for those over 80 in the UK will increase by 50% and that the number of people over 90 years will also have doubled (World Health Organization and the International Diabetes Federation, 2004). Older people with diabetes have additional problems to the general older population – for example, hospitalisation rates of older people are 70% higher for those with diabetes (Croxson, 2002). This article explores these problems, and some ways in which diabetes care approaches may tackle them.

The *National Service Framework [NSF] for Older People* (Department of Health [DoH], 2001) states that health and social care services should treat older people as individuals and enable them to make choices about their own care, and that this should be achieved by, among other things, an 'integrated provision of services'. However, this may not be achievable in the present climate of limited resources (Richmond, 2004).

The incidence of diabetes in older people is higher than for the rest of the population for a number of reasons, but mainly because increasing insulin resistance accompanies ageing, even if the older person is not particularly obese or sedentary (Reaven, 1988). It is not known why insulin resistance increases with age, as the pancreas appears to produce insulin at a normal rate, with the fasting blood glucose actually rising very slowly over time. However, postprandial glucose levels rise much more quickly and lead to the diagnosis (Jarvis and Rubin, 2003).

Older people with diabetes may not complain of any symptoms, or not those usually associated with type 2 diabetes (Jarvis and Rubin, 2003). They may have a loss of appetite, or weakness, and may have experienced weight loss. In addition, symptoms of urinary incontinence (usually associated with prostate problems in men and urinary tract infections in women) may occur (Jarvis and Rubin, 2003). Older people with diabetes may not complain of thirst as their ability to feel thirst is altered (Jarvis and Rubin, 2003). Nevertheless, any of these symptoms may indicate diabetes in the older person.

While there are many older people who manage their diabetes very well, a number of problems can exist in older people with the condition. This article explores some of the areas in which older age could affect diabetes management.

Intellectual functioning

The intellectual functioning of an older person

with diabetes may need assessment if cognitive impairment is suspected because management of the condition requires a fairly high level of mental functioning; the individual has to follow a given diet and medication regimen, and might need to test his or her blood glucose level. Studies have shown that older people with both type 1 and type 2 diabetes have a higher incidence of dementia (defined as loss of mental functioning by Ryan et al [2003]) and Alzheimer's disease (Den Heijer et al, 2003; Arvanitakis et al, 2004), making it much harder to perform these tasks.

The person with diabetes can undergo cognitive screening tests to determine their level of functioning, and to see if they can remain self-sufficient. These tests may show that older people who live alone with no assistance may require a carer to visit, sheltered housing, or relocation to a nursing home.

Diet

Many older people with diabetes do not require this level of care and may only have problems associated with nutrition. As well as the intellectual functioning required to understand and prepare a healthy diet, the individual may have other problems associated with proper nutrition. These include:

- low income
- poor vision
- poor appetite due to decreased taste and smell
- arthritis or tremor, making preparation of food difficult
- poor teeth or dry mouth
- depression affecting the appetite (Sinclair and Barnett, 1993)
- feeling that he or she is too old to worry about caring for his or her diabetes (Jarvis and Rubin, 2003).

One or a number of these problems may mean an inadequate diet and resultant poor diabetes control.

Exercise

Older people with diabetes may be concerned about their diet and exercise if they have previously led a fit and healthy lifestyle.

Exercise as a treatment option may be limited in the older person with diabetes. However, studies have shown that, even in the very old, exercise reduces blood glucose concentration and HbA_{1c} (Watson, 2001). However, older people are more likely to have coronary heart disease, arthritis, eye disease, neuropathy and peripheral vascular disease (Jarvis and Rubin, 2003), potentially meaning exercise is difficult.

Eyesight

Older people are particularly at risk of eye disease brought on by diabetes, which may compromise all aspects of their care. They are susceptible to cataracts, macular degeneration, and open-angle glaucoma in addition to diabetic retinopathy (Shotliff and Duncan, 2005). Evans et al (1996) reported that one-third of older people have never had an eye examination. This highlights the issue of detecting and treating eye disease early. Indeed, a report from Diabetes UK (2005) stated that the vast majority of cases of diabetes-related blindness can be prevented if those at risk are treated 'early and adequately'.

Urinary and sexual problems

Urinary and sexual problems are common in older people with diabetes. Paralysis of the bladder muscle may cause retention of urine and overflow incontinence when the bladder is full (Jarvis and Rubin, 2003). In addition, mobility problems may cause difficulty in getting to the toilet, and spasms in the bladder muscle may lead to incontinence. All of the above may also mean the individual suffers from frequent urinary tract infections.

Studies have shown that almost 60% of men with diabetes over the age of 70 have erectile dysfunction and 50% have no libido (Wellmer et al, 1999; Cummings, 2004). This problem may have a number of causes, but it is thought that older men are likely to have blockage of blood vessels, causing poor flow into the penis (Cummings, 2004). In addition, medications taken by older patients may affect sexual function (Cummings, 2004). It is therefore prudent to assess the exact nature and scale of the problem in order to diagnose and treat it with appropriate medication.

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2. Exercise as a treatment option may be limited in the older person with diabetes. However, studies have shown that, even in the very old, exercise reduces blood glucose concentration and HbA_{1c}.
3. Older people are particularly at risk of eye disease brought on by diabetes, which may compromise all aspects of their care.
4. Urinary and sexual problems are common in older people with diabetes. Paralysis of the bladder muscle may cause retention of urine and overflow incontinence when the bladder is full.

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1. Depending on a person's life expectancy, the level of care recommended may differ.
2. If diet and exercise cannot be used to control an individual's diabetes, medication must be considered. However, the older individual may experience a number of difficulties associated with this decision.
3. However, it is also important to remember that many older people are capable of administering their own medication and may be very independent in this respect.
4. In addressing potential problems with diet and nutrition, the *National Service Framework for Older People* states that a priority is to ensure older people have access to dental treatment which enables a varied and healthy diet to be eaten.

Treatment

Treatment options depend on the age of the patient and his or her life expectancy. A person with diabetes living to age 65 has a life expectancy of at least 18 more years, allowing time for chronic complications of diabetes to develop (Jarvis and Rubin, 2003). Depending on life expectancy, the level of care recommended may differ. For example, a 'basic' therapy approach might be more appropriate for those with a shorter life expectancy, aiming to prevent acute problems of diabetes by keeping the blood glucose under 11.1 mmol/l. Alternatively, intensive therapy with the aim of preventing complications might be more appropriate in a person with a longer life expectancy (Finucane and Popplewell, 2001). It is common practice to aim for an optimum blood glucose level of <7 mmol/l.

Medication

If diet and exercise cannot be used to control an individual's diabetes, medication must be considered. However, the older individual may experience a number of difficulties associated with this decision, including:

- poor eyesight to administer the correct dosage
- poor intellectual functioning
- physical limitations
- drug interactions from other medications
- possibly decreased liver or kidney function making diabetes drugs longer acting
- poor nutrition making the individual prone to hypoglycaemia (Jarvis and Rubin, 2003).

It should also be noted that a person with diabetes transferring from self-care to institutional care may require a review of the dosage of his or her medication, as he or she may not have not been taking it properly (Jarvis and Rubin, 2003). It is also important to remember that many older people are capable of administering their own medication and may be very independent in this respect.

Overcoming these issues

How might these issues be addressed? In terms of assessing intellectual functioning and addressing any limitations, cognitive screening

tests conducted by a mental health professional, following referral by a person's GP, can diagnose any difficulties. Care strategies may then be determined accordingly; the NSF for older people states that 'a comprehensive mental health service will involve an integrated approach to assessment, care planning, and treatment planning' (DoH, 2001).

Diet and adequate nutrition has also been highlighted by the NSF for older people as an important area in Standard 8 ('Promotion of health and active life in older age'; DoH, 2001). As previously listed, there may be a number of issues affecting the individual's ability to take in a proper diet. The NSF states that a priority is to ensure older people have access to dental treatment which enables a varied and healthy diet to be eaten (DoH, 2001). In the event that the individual cannot prepare his or her own food, dietary support for older people with diabetes is available. For example, Social Services co-ordinate 'meals on wheels' services, which offer alternative meals for people with diabetes, and ensures one meal is delivered to the person's home per day. In some areas, variations for different ethnic backgrounds are also available (Jarvis and Rubin, 2003). Private companies also provide meals by daily or weekly deliveries.

Exercise for the older person with diabetes has been stated previously to be potentially problematic. However, many older people with diabetes remain fit and active, and groups such as Help the Aged run local groups that allow the individual to participate in gentle exercise classes. The individual's diabetes consultant, diabetes nurse and GP can advise him or her on the best form of exercise, tailored to any specific needs (e.g. weight loss, improved glycaemic control).

The NSF for diabetes (DoH, 2003) has prioritised screening of retinopathy in England as one of only two crucial national targets. It stated that by 2006, a minimum of 80% of people with diabetes are to be offered screening for the early detection and treatment of diabetic retinopathy, rising to 100% by 2007. For the older person with diabetes, regular visits to the optician, and ophthalmologist if there is existing

eye disease, are, in the author's opinion, the key to early detection and treatment.

As with all complications of diabetes, glycaemic control is important to the management of urinary and sexual function problems (Macleod and Cook, 2005). In addition, referral to a continence nurse by the individual's GP may help address issues of incontinence. In terms of problems with sexual function in older people, it is important to take an accurate history, given the number of problems that may be affecting sex life (Cummings, 2005). Inquiry should also be made about causative medication and the possibility of depression. In addition, a clinical examination should be conducted (Cummings, 2005).

Conclusion

It is clear that older people with diabetes must be assessed on an individual basis regarding their capacity for diabetes self-care, or within the boundaries of resource availability which exist for institutional care. In order to maintain the best possible quality of life, the person with diabetes must be assisted in overcoming any barriers associated with older age and his or her diabetes care. Being aware of the factors previously discussed is perhaps the first step in addressing them with the individual, before they become too difficult for him or her to deal with.

Older people with diabetes do not necessarily fit into any of the previous categories. It has been suggested that an individual's ability to learn new diabetes management skills is not particularly influenced by age or intelligence (Poon and Siegler, 1991; Watson, 2001). As with the general population with diabetes, older people have varying diabetes management skills, abilities and coping strategies. It is therefore important to remember that diabetes care for older people should be just as individualistic as that for younger people. ■

Arvanitakis Z, Wilson RS, Bienias JL et al (2004) Diabetes mellitus and risk of Alzheimer disease and decline in cognitive function. *Archives of Neurology* **61**: 661–6

Croxxon S (2002) Diabetes in the elderly: problems of care and service provision. *Diabetic Medicine* **19**(Suppl 4): 66–72

Cummings MH (2004) Erectile dysfunction in diabetes mellitus. In: De Fronzo RA, Ferrannini E, Keen H, Zimmet P (eds) *International Textbook of Diabetes Mellitus* (3rd edition). John Wiley & Sons, Chichester

Cummings MH (2005) Diabetes and sexual health. In: Shaw KM and Cummings MH (eds) *Diabetes: Chronic Complications*. John Wiley & Sons, Chichester

Den Heijer T, Vermeer SE, van Dijk EJ et al (2003) Type 2 diabetes and atrophy of medial temporal lobe structures on brain MRI. *Diabetologia* **46**: 1604–10

Department of Health (DoH; 2001) *National Service Framework for Older People*. DoH, London

DoH (2003) *National Service Framework for diabetes: Delivery Strategy*. DoH, London

Diabetes UK (2005) *Diabetes and blindness: A focus on action*. Diabetes UK, London

Evans J, Rooney C, Ashwood F et al (1996) Blindness and partial sight in England and Wales: April 1990–March 1991. *Health Trends* **38**: 5–12

Finucane P, Popplewell P (2001) Diabetes mellitus and impaired glucose regulation in old age: the scale of the problem. In: Sinclair AJ, Finucane P (eds) *Diabetes and Old Age*, 2nd edition. John Wiley & Sons, Chichester

Jarvis S, Rubin AL (2003) *Diabetes for Dummies, UK edition*. John Wiley & Sons, Chichester

Macleod A, Cook A (2005) Diabetes and autonomic neuropathy. In: Shaw KM and Cummings MH (eds) *Diabetes: Chronic Complications*. John Wiley & Sons, Chichester

Poon LW, Siegler IC (1991) Psychological aspects of normal ageing. In: Sadavoy J, Lazarus LW, Jarvik LF (eds) *Comprehensive Review of Geriatric Psychiatry*. American Psychiatric Press, Washington, 117–145

Reaven GM (1988) Role of insulin resistance in human disease. *Diabetes* **37**: 1595–607

Richmond J (2004) 'I can't do my insulin injections anymore...'. *Journal of Diabetes Nursing* **8**(10): 378

Ryan CM, Geckle MO, Orchard TJ (2003) Cognitive efficiency declines over time in adults with type 1 diabetes: effects of micro- and macrovascular complications. *Diabetologia* **46**: 940–8

Shotliff K, Duncan G (2005) Diabetes and the eye. In: Shaw KM and Cummings MH (eds) *Diabetes: Chronic Complications*. John Wiley & Sons, Chichester

Sinclair AJ, Barnett AH (1993) Special needs of elderly diabetic patients. *British Medical Journal* **306**: 1142–3

Watson R (2001) Old age: mind, body and spirit – the biological stages of ageing. *Journal of Community Nursing* **15**(4): 24–8

Wellmer A, Sharief MK, Knowles CH et al (1999) Quantitative sensory and autonomic testing in male diabetic patients with erectile dysfunction. *British Journal of Urology International* **83**: 66–70

World Health Organization (WHO), International Diabetes Federation (2004) *Diabetes Action Now: An Initiative of the World Health Organization and the International Diabetes Federation*. WHO, Geneva

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